21. (Amended) A method of producing a peptide or protein expression library which displays a population of peptides or proteins, wherein the peptides or proteins are specifically associated with the DNA encoding them through covalent binding of protein to the encoding DNA, said method comprising at least the following steps:

1) preparing a genetic library of a population of DNA molecules, each DNA molecule comprising:

(a) a nucleotide sequence encoding a binding moiety comprising an amino acid sequence which is a *cis*-acting DNA binding protein which binds specifically to the DNA encoding sequence through covalent binding of the amino acid sequence to DNA, and

(b) a nucleotide sequence encoding a display moiety comprising an amino acid sequence for display, and wherein the display moiety comprises at least one site of attachment for the binding moiety, and

2) expressing the genetic library thus formed whereby the population of peptides or proteins is produced each specifically associated with and covalently bound to the DNA encoding sequ nce.

22. (Amended) The method as claimed in claim 21 wherein expression of the genetic library is performed *in vivo* with at least one copy of a single library member expressed per host cell or organism.

24. (Amended) The method as claimed in claim 21 wherein expression of the genetic library is performed *in vitro*.

25. (Amended) The method as claimed in claim 21 wherein said *cis*-acting protein is the P2 A protein.

26. (Amended) The method as claimed in claim 24 wherein said expression is performed in the presence of a mis-match oligonucleotide which hybridizes to the DNA adjacent to the attachment site on both sides but that does not hybridize to the attachment site.

27. (Amended) The method as claimed in claim 21 wherein said amino acid sequence for display is up to 40 amino acid residues.

28. (Amended) The method as claimed in claim 21 wherein said amino acid sequence for display is generated by, or comprises DNA fragments from, cloning.

29. (Amended) A method as claimed in claim 21 wherein said binding moiety is derived from P2A which has been modified by replacement of tyrosine at amino acid position 450 with phenylalanine.

31. (Amended) A DNA molecule comprising a sequence encoding a binding moiety comprising an amino acid sequence that is a cis-acting DNA binding protein that binds specifically to the DNA encoding sequence through covalent binding of the amino acid sequence to the DNA, and a sequence encoding a display moiety comprising an amino acid sequence for display, the display moiety comprising at least one site of attachment for the binding moiety.

32. (Amended) A DNA vector comprising the DNA molecule as claimed in claim 31.

34. (Amended) A method of identifying a specific target-binding peptide or protein, said method comprising at least the steps of a) screening a peptide expression

library produced according to the method of claim 21 with a target molecule and b) selecting and isolating a library member binding to said target molecule and c) isolating the peptide or protein which binds specifically to said target molecule.

35. (Amended) The method as claimed in claim 34 further comprising isolating the DNA sequence encoding the peptide or protein that binds specifically to said target molecule.

36. (Amended) A method of assaying for the presence of a target molecule in a sample, said method comprising

(a) contacting said sample with a molecular probe comprising

(i) a peptide or protein target-binding moiety capable of selectively binding to said target molecule wherein said target-binding moiety is covalently bound to DNA encoding said target binding moiety and

(ii) a reporter moiety

wherein said contacting is effected under conditions such that said target-binding moiety can bind target molecule present in said sample; and

(b) detecting the presence of reporter moiety bound to said molecular probe.

39. (Amended) The method according to claim 21, wherein said nucleic acid encoding said amino acid sequence for display is generated by amplification by PCR.

40. (New) The method according to claim 21 wherein the cis-acting protein is ϕX174.

REMARKS

Reconsideration of this application and entry of the foregoing amendments are respectfully requested.

The claims have been revised to define the invention with additional clarity. Claims 23, 30, 33, 37 and 38 have been cancelled and new claim 40 (finding support, for example, at page 10, line 25) has been added. That the claims have been amended/cancelled should not be viewed as an indication that Applicants agree with any view expressed by the Examiner. Rather the revisions have been made merely to advance prosecution and Applicants reserve the right to pursue any deleted subject matter in a continuation application.